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IN THE CLAIMS:

1. (currently amended) A method of forming a low dielectric constant structure, comprising the steps of:

- providing on a substrate a non Si-H containing dielectric material having a first elastic modulus; and
- curing the dielectric material whereby the material is heated from a first temperature to a second temperature by increasing the temperature at an average rate of at least 1°C per second or more, to produce a dielectric material having a second elastic modulus, which is greater than the first elastic modulus;

wherein the dielectric material is formed from a precursor that is a silicon-containing chemical compound having the formula

$(R_1\text{-}R_2)_n\text{-Si-}(X_1)_{4-n}$,

wherein

X_1 is halogen, acyloxy, alkoxy or OH group,

R_2 is an optional group and comprises an aromatic group having 6 carbon atoms and

R_1 is a substituent at position 4 of R_2 selected from an alkyl, cyclo alkyl or polycyclo alkyl group having from 1 to 13

carbon atoms, an alkenyl group having from 2 to 5 carbon atoms, an alkynyl group having from 2 to 5 carbon atoms, Cl or F; and

n is an integer 1-3; and

is an organosiloxane polymeric material selected from the group consisting of methylsilsesquioxane, phenylsilsesquioxane, methylphenylsilsesquioxane, methylvinylsilsesquioxane, phenylvinylsilsesquioxane, vinylsilsesquioxane, methylphenylvinylsilsesquioxane; adamantyl or adamantyl derivative containing silsesquioxane; and perfluorinated or partially fluorinated aryl, alkyl or aryl-alkyl containing silsesquioxane.

2. (withdrawn) The method according to claim 1, wherein the temperature difference between the second and the first temperature is at least 200 °C.

3. (withdrawn) The method according to claim 2, wherein the temperature difference between the first and second temperature is in the range of from 225 to 425 °C.

4. (withdrawn) The method according to claim 3, wherein the temperature difference between the first and second temperatures is

at least 300 °C.

5. (withdrawn) The method according to claim 1, wherein the dielectric material is heated to a second temperature by increasing the temperature at an average rate of at least 1 °C per second or more.

6. (withdrawn) The method according to claim 5, wherein the dielectric material is heated to a second temperature by increasing the temperature at an average rate of from 10 to 50 °C per second.

7. (withdrawn) The method according to claim 1, wherein the first temperature is room temperature.

8. (withdrawn) The method according to claim 1, wherein the temperature is increased over a time period of 5 minutes or less.

9. (withdrawn) The method according to claim 8, wherein the increase in temperature occurs over a time period of 1 minute or less

10. (withdrawn) The method according to claim 1, wherein the

temperature is increased from the first temperature to the second temperature at a heating rate of at least 10 °C per second.

11. (withdrawn) The method according to claim 10, wherein the heating rate is at least 30 °C per second.

12. (withdrawn) The method according to claim 1, wherein the dielectric constant of the dielectric material is 2.60 or less.

13. (withdrawn) The method according to claim 12, wherein the dielectric constant of the dielectric material after curing is 2.50 or less.

14. (withdrawn) The method according to claim 13, wherein the dielectric constant of the dielectric material after curing is 2.40 or less.

15. (canceled)

16. (withdrawn) The method according to claim 1, wherein the porosity of the dielectric material is less than 15 %.

17. (withdrawn) The method according to claim 1, wherein the average pore-size is less than 1 nm.

18. (withdrawn) The method according to claim 1, wherein the Young's modulus of the film is higher than 4 GPa after curing.

19. (withdrawn) The method according to claim 18, wherein the Young's modulus of the film is higher than 5 GPa after curing.

20. (withdrawn) The method of claim 1, wherein the change in elastic modulus is 4 GPa or higher.

21. (withdrawn) The method according to claim 1, wherein substrate is a semiconductor substrate.

22. (withdrawn) The method of claim 21, wherein the dielectric material is provided on said semiconductor substrate in alternating areas with an electrically conductive material.

23. (withdrawn) The method of claim 22, wherein the electrically conductive material comprises aluminum.

24. (withdrawn) The method of claim 22, wherein the electrically conductive material comprises copper.

25. (withdrawn) The method of claim 22, wherein the alternating areas are formed by depositing and patterning the dielectric material, followed by depositing the electrically conductive material.

26. (withdrawn) The method of claim 25, wherein the depositing of the dielectric material and electrically conductive material is part of a copper damascene process.

27. (withdrawn) The method of claim 22, wherein the alternating areas are formed by depositing and patterning the electrically conductive material, followed by depositing the dielectric material.

28. (withdrawn) The method according to claim 1 or 21, wherein the dielectric material is deposited on the substrate by a spin-on process.

29. (withdrawn) The method according to claim 1 or 21, wherein

the dielectric material is deposited on the substrate by spray-on or dip coating.

30. (withdrawn) The method according to claim 1 or 21, wherein the dielectric material is deposited on the substrate by chemical vapor deposition.

31 - 41. (canceled)

42. (withdrawn) The method according to claim 1, wherein the dielectric material under cure is a low molecular weight polymer having molecular weight between 1,000 - 10,000 g/mol.

43. (withdrawn) The method according to claim 1, wherein the dielectric material under cure is a high molecular weight polymer having molecular weight between 10,000 - 100,000 g/mol.

44. (withdrawn) The method according to claim 1, wherein the dielectric material under cure is a combination of low and high molecular weight polymers having molecular weight between 1,000 - 10,000 g/mol and 10,000 - 100,000 g/mol.

45. (withdrawn) The method according to claim 1, wherein the dielectric material under cure contains thermally labile porogens.

46 - 47. (canceled)

48. (withdrawn) The method according to claim 1, wherein the dielectric material is subjected to pre-annealing before curing.

49. (withdrawn) The method according to claim 48, wherein the annealing is carried out by a process in which the material is subjected to electromagnetic radiation.

50. (withdrawn) The method according to claim 49, wherein the electromagnetic radiation is selected from UV radiation, DUV radiation, Extreme UV radiation and IR radiation or a combination thereof.

51. (withdrawn) The method according to claim 48, wherein the annealing is carried out by a process in which the material is exposed to an electron-beam.

52. (withdrawn) The method according to claim 49, wherein the

dielectric material after curing is subjected to annealing in an atmosphere of air, nitrogen, argon, oxygen, hydrogen, helium, forming gas or vacuum.

53. (withdrawn) The method of claim 48 or 52, wherein after the annealing and curing steps the dielectric material comprises less than 1 wt% of silanols.

54. (withdrawn) The method of claim 48 or 52, wherein after the annealing and curing steps, the dielectric material is free of silanols.

55. (withdrawn) The method according to claim 48, wherein the annealed material is subjected to the deposition of a second layer selected from a metal, a diffusion barrier, a liner, a hard mask or an additional dielectric layer.

56 - 57. (canceled)

58. (withdrawn) The method according to claim 1, wherein the pore size is of the dielectric material is less than 2 nm.

59. (withdrawn) The method according to claim 1, wherein coefficient of thermal expansion of the dielectric material is less than 35 ppm.

60. (withdrawn) The method according to claim 1, wherein thermal decomposition temperature of the dielectric material is higher than 450 °C.

61 - 63. (canceled)

64. (withdrawn) The method according to claim 1, wherein the dielectric material has a dielectric constant of from 2.1 to 2.3.

65. (withdrawn) The method of claim 1, wherein the density of the dielectric material after curing is 1.0 g/cm^3 or more.

66. (withdrawn) The method according to claim 1, wherein an average pore size of the dielectric material is less than 2 nm.

67. (withdrawn) The method according to claim 1, wherein a coefficient of thermal expansion of the dielectric material is less than 20 ppm.

68. (withdrawn) The method according to claim 1, wherein a co-efficient of thermal expansion of the dielectric material is less than 15 ppm.

69. (withdrawn) The method according to claim 1, wherein a co-efficient of thermal expansion of the dielectric material is less than 10 ppm.

70. (withdrawn) The method according to claim 1, wherein a thermal decomposition temperature of the dielectric material is higher than 455 °C.

71. (withdrawn) The method according to claim 1, wherein a thermal decomposition temperature of the dielectric material is higher than 460 °C.

72. (withdrawn) The method according to claim 1, wherein a thermal decomposition temperature of the dielectric material is higher than 470 °C.

73 - 81. (canceled)

82. (withdrawn) The method of claim 1, wherein the rapid thermal heating is achieved by using a heating or radiation source selected from IR radiation sources and filaments.

83. (withdrawn) The method according to claim 82, wherein the heating or radation source is selected from tungsten lamps, ARC lamps and inductively coupled heating sources.

84 - 86. (canceled)